

**Technical Review of the former United Shoe machinery (USM) sampling data, evaluations  
and conclusions presented in the November-December 2017 Progress Report  
(sent in email dated 2/28/18)**

**Section 4.1.1 – 4.1.6 Exterior Groundwater Monitoring Well Installations: Day 1-Day 5 and  
Remaining Exterior Groundwater Monitoring Wells  
Development of Groundwater Monitoring Wells**

These sections discuss the use of low-flow purging procedures for monitoring well **development**. This is not consistent with the work plan and standard operating procedures which calls for bailing and purging, not low-flow purging which would not be proper well development. Clarification about the well development procedures discussed in the progress report were requested by email on February 6<sup>th</sup> and provided on February 13<sup>th</sup>. The email response did not provide the necessary information. A follow-up call was made to Bruce Hoskins on the 13<sup>th</sup> for clarification on this and the leak testing but no follow-up on the well development issue was provided. Wells should be properly developed prior to any additional groundwater sampling.

**Section 4.1.4 Exterior Groundwater Monitoring Well Installations: Day 4**

Regarding the failed attempt to install a groundwater monitoring well at UST-32 location, further discussion is warranted regarding this location the GPS anomalies and the downgradient groundwater concentrations of ethylbenzene and xylenes in monitoring well FSL- 7.

**Section 4.1.6 Development of Remaining Groundwater Monitoring Wells**

The last sentence in the first paragraph lists section 3.2 but should likely state 4.2.

**Section 4.3 Soil Gas Sampling Point Installations  
Building 100 – Unit 135C and Units S-149-J**

The canal breached beneath the 6<sup>th</sup> soil gas point (room marked infant 3) may be a significant preferential pathway warranting further study or at a minimum further discussion. Were sub-slab utilities and channels considered when selecting sampling locations?

Last sentence on page 4, first para (incomplete) states “The third soil gas sample point (“SV-10”) was installed....” Please clarify. The third point was identified above as SV-6 in the prior paragraph.

**Section 5.0 December 2017 Groundwater Sampling and Analysis**

The second paragraph to this section states that 2 wells ran dry and could not be sampled. Please clarify if low flow purging and sampling procedures to minimize draw down (refer to SOP),

and/or if a second attempt to collect samples at these locations were attempted in order to obtain a complete data set as proposed.

The third paragraph discusses PCB detected in groundwater and the fact that the concentrations were well below the most conservative nondrinking water regulatory action level of 5 ug/l but should also discuss one of the purposes of the sampling which was to determine if the stabilized PCBs contaminated soils were placed above the high groundwater level and whether or not they are impacting groundwater.

## **6.0 Evaluation of Analytical and Site Data Collected for This Progress Report**

Since there were exceedances of Reportable Concentrations, a 120 notification to Mass DEP is likely required.

Regarding the last sentence to this section refer to the UST-32 comment in Section 4.1.4 comments above. Please clarify what analytical data is referred to if no well could be installed. Also, it appears the well was not installed due to refusal and not the lack of any apparent residual source as stated here. This should be identified as a data gap and at a minimum requires further discussion.

### **Figures 3-6**

These figures need to be shown with a north arrow and be shown with the exact orientation (as inserts) on a site plan.

### **Table 1 Soil Analytical Results**

FSL-100, FSL-200 and FSL-300 are not indicated on the figures. Please add the locations.

### **Table 2 Groundwater Analytical Results**

The results for duplicates 1 and 2 as presented in the table appear to be reversed. Please confirm.

“ND” is not used in the table but is defined in the foot notes of the table. Instead, it would be appropriate to identified whether < the reporting or detection limits are what is included in the table for non-detect results.

Also, it would be appropriate to identify in some form of highlighting where the reporting limit exceeds the screening level.

## **Appendices**

### **Appendix C**

A significant number of boring logs and/or field logs do not indicate at what depth groundwater was reached during drilling. This information should have been included.

#### **Appendix D**

Starting on page 133 of 375 of the laboratory reports, the reports indicate the coolers and samples did not have custody seals on them. Please clarify and discuss the implications on the overall quality assurance/control objectives.

Not all samples were maintained at the required temperature of 4 deg. C or less. Please clarify and discuss the implications on the overall quality assurance/control objectives.

## **Technical Review of the former United Shoe machinery (USM) sampling data, evaluations and conclusions presented in the January 2018 Progress Report.**

### **GENERAL COMMENTS**

A discussion regarding the data usability needs to be included here or in a subsequent report. Data completeness and the potential impact on the overall investigation, if any, needs to be discussed. For example:

- FSL-2 ran dry during purging and did not recharge for sample collection – were the low-flow sampling procedure to minimize drawdown employed and was an attempt to resampled made?
- Two of the planned soil gas samples in Building 100 Suite S-157-J were not collected due to (1) a soil gas sampling point being destroyed and (2) a canister malfunction.
- SV-3 was not included on the chain of custody. Although the canister was received by the lab, analysis was not conducted.
- Outdoor ambient air sample results cannot be located.
- Other issues as included in these comments and the comments on the November-December Progress Report.

The field log book lacks any discussion of the leak testing completed in the field. Further, this was not discussed in the work plan. Although it is acknowledged that there was a brief mention of leak testing in the QAPP, and it only stated that it “may” take place. The SOP that was provided following completion of the field work (in email dated February 14, 2018), was not included in the QAPP.

Please submit the field logs for all previous indoor air and soil gas sampling (since 2010) within 60 days of receipt of these comments.

### **SPECIFIC COMMENTS**

#### **Section 3.1 Soil Gas Sampling Collection**

The last sentence to the last paragraph in this section should be deleted or at least reworded. In general, exceedances, or not, of screening values do not necessarily mean vapor intrusion is occurring, or not. Consider rewording similar to the following.

“Vapor intrusion is not likely occurring, at concentrations that pose an unacceptable risk, when contaminant values are below....”

The same change should also be made to this statement in Section 3.2 Indoor Air Sample Collection

## **Section 4.0 Evaluation of Analytical and Site Data Collected for This Progress Report**

The last 2 sentences in the first paragraph to this section may be misleading and should be revised. To state that the concentrations "...for vapor intrusion to be present, the concentrations of contaminants in indoor air cannot exceed (or be in the same order of magnitude as) the concentrations in soil gas." is a very definitive statement and may be misleading or even inaccurate in this case. There is an underlying assumption that the data is valid and representative of actual conditions. If that is the case, it should be stated in order to support the statement. Based on the comments contained here and the need for further clarifications/discussions on the quality assurance/control objectives, this statement is at least premature for this site.

### **TABLE 4**

#### **Vapor Intrusion Comparison of Groundwater, Soil Gas, and Indoor Air Chemical Analysis Results for Detected Compounds**

It's not clear that using a range of samples results, as presented in this table, is an appropriate or representative evaluation to support decision making. There is no groundwater data included in this table. For such a comparison, each coordinating groundwater, soil gas and indoor air sample should be compared. Are all samples inc in the ranges in one room and can complete mixing be established?

### **Appendix A**

#### **Groundwater Sampling Well Records and Field Parameters**

The turbidity in several of the wells samples is excessive and may be the result of improper well development. Refer to low flow procedures for proper sampling procedures and to reduce turbidity to acceptable levels.

Please explain the negative ORP/Eh values recorded on the filed logs.

### **Appendix B**

#### **GROUNDWATER ANALYTICAL ANALYSIS RESULTS**

Starting on page 132 of 554 the lab reports indicate that custody seals were absent from the coolers and sampling containers. Please clarify and discuss the implications on the overall quality assurance/control objectives.

On page 94 of 101 and 67 of 75 of the lab report (140 and 214 of 554 of the entire document) the Chain of Custody does not identify the matrix, does not identify the preservation method and does not include appropriate times with the signatures indicating that the samples were handled appropriately. Please clarify and discuss the implications on the overall quality assurance/control objectives.

## **Appendix C**

### **AIR SAMPLING CANISTER FIELD RECORDS**

On page 224 of 554 of the entire document, it indicates that for IDA sample S-149J.3 the ending vacuum was 0, therefore this result can only be used qualitatively as the final vacuum should be closer to -7" Hg without zeroing out. Further discussion is warranted.

On page 226 of 554 of the entire document, it indicates that for IDA sample S-171X.1 the ending vacuum was -16.28 but the final vacuum should be closer to -7" Hg. Further discussion is warranted.

## **Appendix D**

### **SOIL GAS AND INDOOR AIR ANALYTICAL ANALYSIS RESULTS**

Lab report page 180 of 237 (498 of 554 document) indicated final canister pressure of +4" Hg but the final vacuum should be closer to -7" Hg. Further discussion is warranted.

Chain of custody reports from pages 551 of 554 to the end do not include appropriate times with the signatures which would indicate that the samples were handled appropriately.